

# Public acceptance of smoke from wild, prescribed, and private-use fire



**Stacey Frederick and Dr. Christine Olsen**

*Dept of Forest Ecosystems and Society*

*Oregon State University*

[Stacey.Frederick@oregonstate.edu](mailto:Stacey.Frederick@oregonstate.edu)

**Dr. Eric Toman and Kathleen Rose**

*School of Environment and Natural Resources*

*The Ohio State University*

# Overview

- **Background**
- **Methods**
- **Study Locations**
- **Social Acceptance Findings**
- **Conclusions and Next Steps**

**Oregon smoke settles in the valley**

Presented at the 19<sup>th</sup> International Symposium for Society and Resource Management in Estes Park, Colorado on June 6, 2013

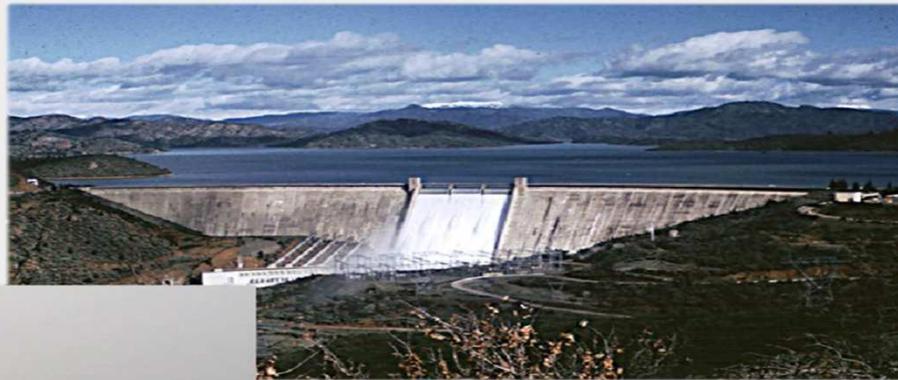
**South Carolina**

# Background

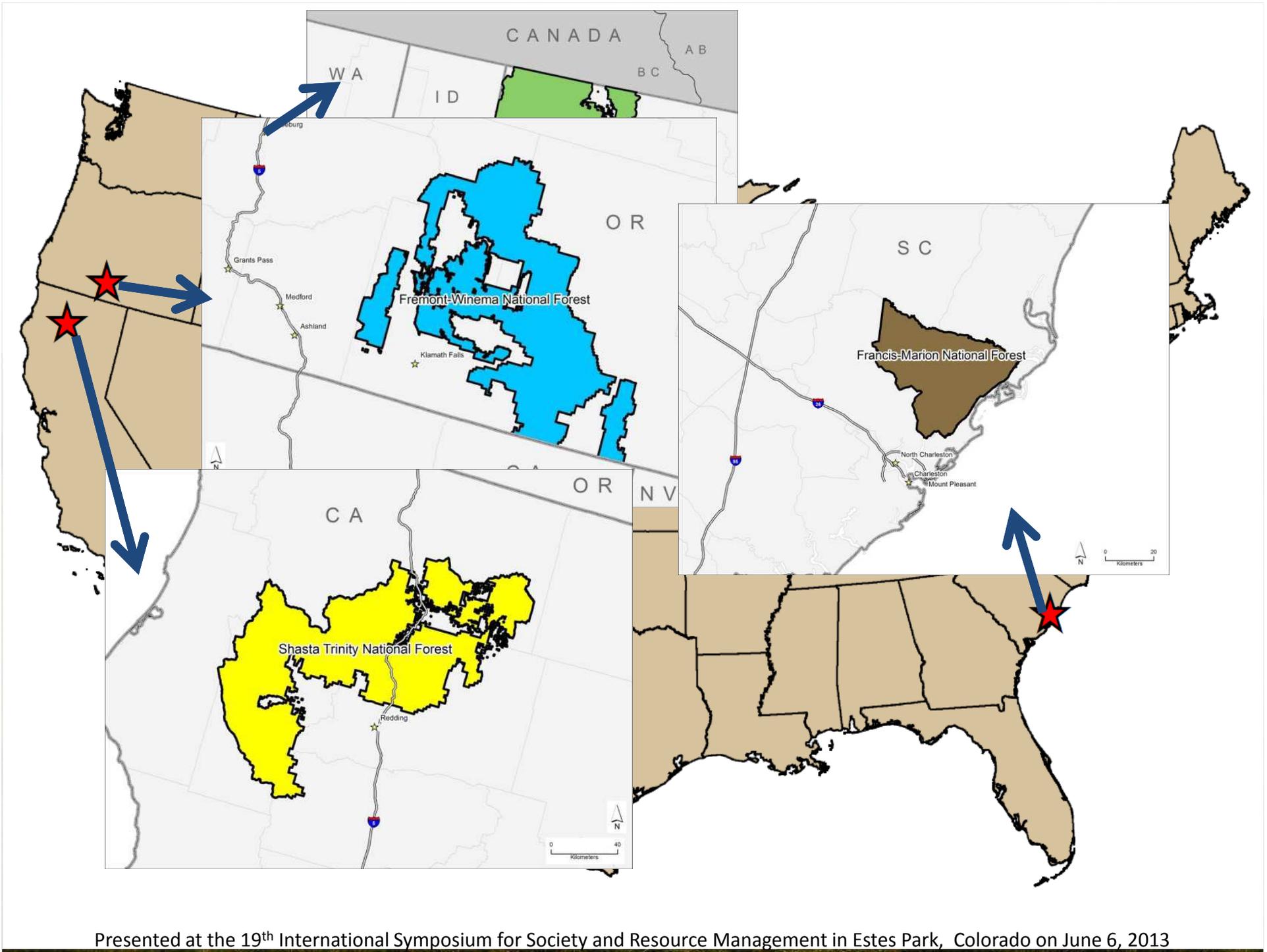
## State of the Forests

- Fire suppression
- Fuel accumulation
- Fuel reduction methods

## Smoke and Air quality



**Shasta Dam, California**



Presented at the 19<sup>th</sup> International Symposium for Society and Resource Management in Estes Park, Colorado on June 6, 2013

# Methods



- Phase 1: Interviews-informed questionnaire
- **Phase 2: Modified Dillman approach survey**
  - 4800 sent in the first mailing wave
  - Response rates 13-33%
  - Non-response bias check



# Respondents

**N = 992**

- ***m*=61 years old**
- **58% Male**
- **88% white/Caucasian**
- **Middle class (\$40,000-60,000)**

# Social Acceptability

## How do you define it?

- Compare alternatives → select favorable ones
- Affective and cognitive



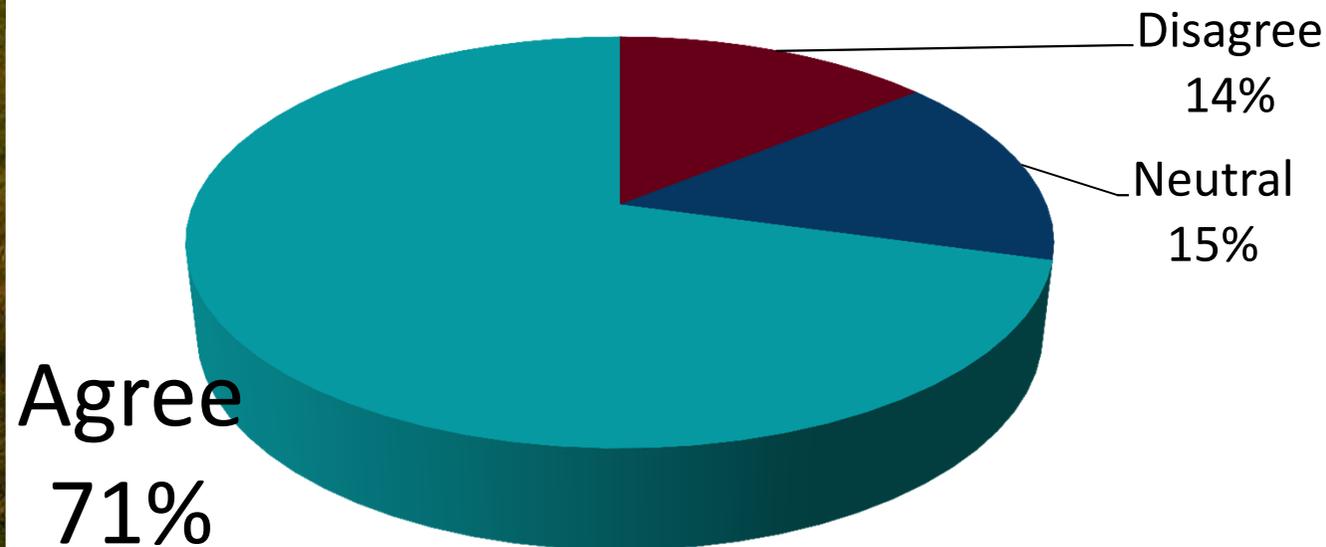
## Why does it matter?

- Public management
- Lead to better agency-public relations
- Less time/money fighting the public

# Smoke Source or Origin

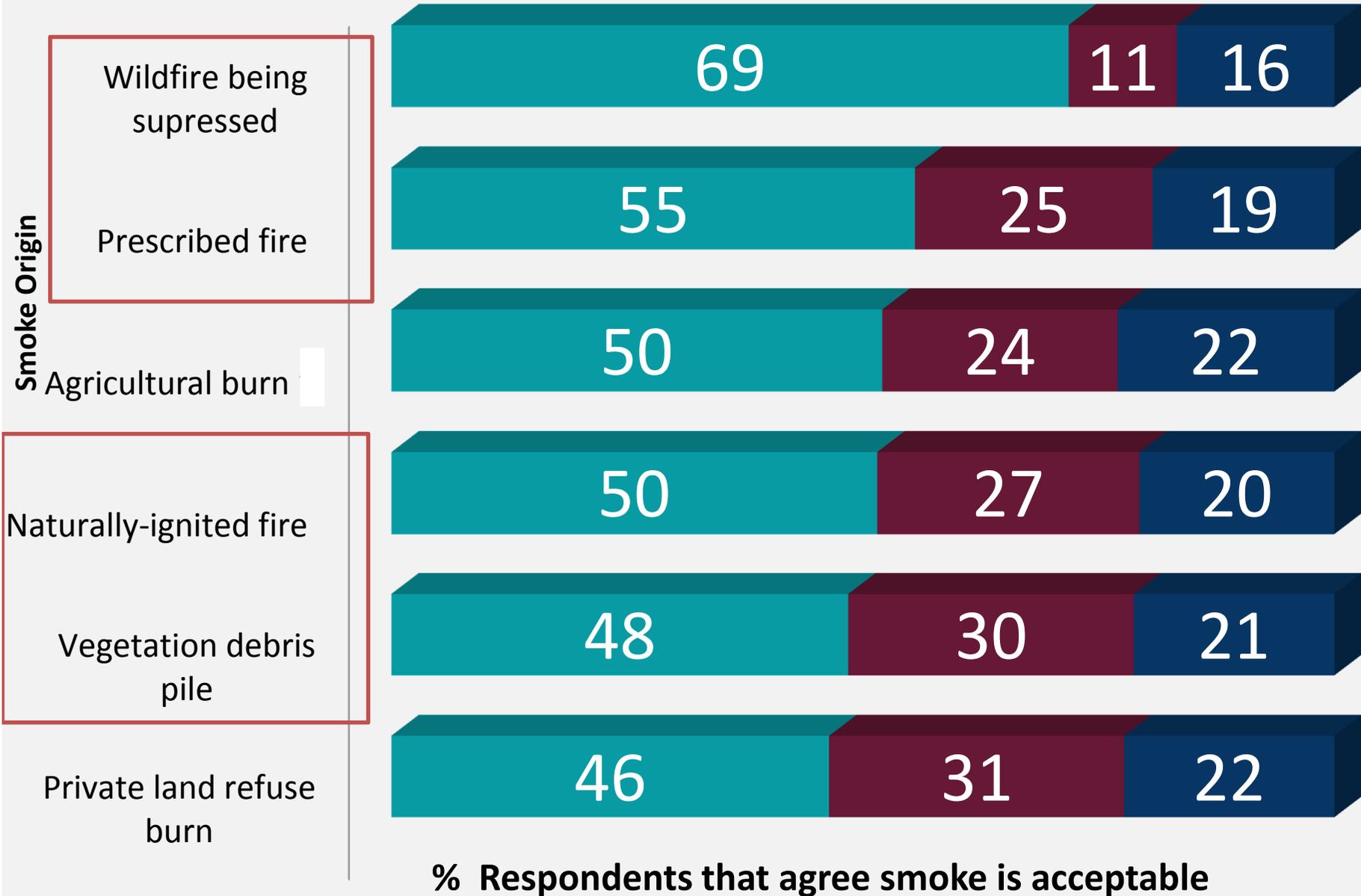
- Smoke source influences acceptance
- Can people tell where the smoke is coming from?

When I notice smoke, I can usually figure out it's source



# Smoke Acceptability of Different Origins

■ Agree ■ Disagree ■ Neutral



Independent Variables	Descriptive
<b>Education</b>	73% attended at least some college
<b>Age</b>	<i>m</i> =61 years old
<b>Communication sources</b>	<i>m</i> = 5 sources were used to gather smoke info
<b>Fire type</b>	57% agree fire type influences acceptance of smoke
<b>Smoke impacts</b>	50% experienced $\geq 3$ smoke impacts
<b>Agency confidence</b>	78% $\geq$ moderate ratings for agencies to manage smoke
<b>Perceived smoke risk</b>	77% perceived smoke risk to be relatively low (24/49)
<b>Prescribed fire benefits</b>	75% agree with benefits of prescribed fire

Independent Variables	Wildfire	Prescribed Fire	Naturally-ignited	Pile Burn
Education		Pos*	Pos*	
Age		NEG*	NEG*	
Communication sources				Pos*
Fire type	Pos**			
Smoke impacts				
Agency confidence	Pos*	Pos**	Pos*	
Perceived smoke risk	NEG*	NEG**	NEG**	NEG**
Prescribed fire benefits		Pos**		
<b>R<sup>2</sup></b>	<b>0.13</b>	<b>0.42</b>	<b>0.18</b>	<b>0.20</b>
**p < .001 *p < .05				

# Summary

**A smoky day in southern Oregon**



- **Perceived smoke risk**
- **Agency confidence**
- **Education and demographics**
- **Prescribed fire model**
- **Other factors?**

# Conclusion & Next Steps

**Increasing smoke acceptance**

**What to focus on?**

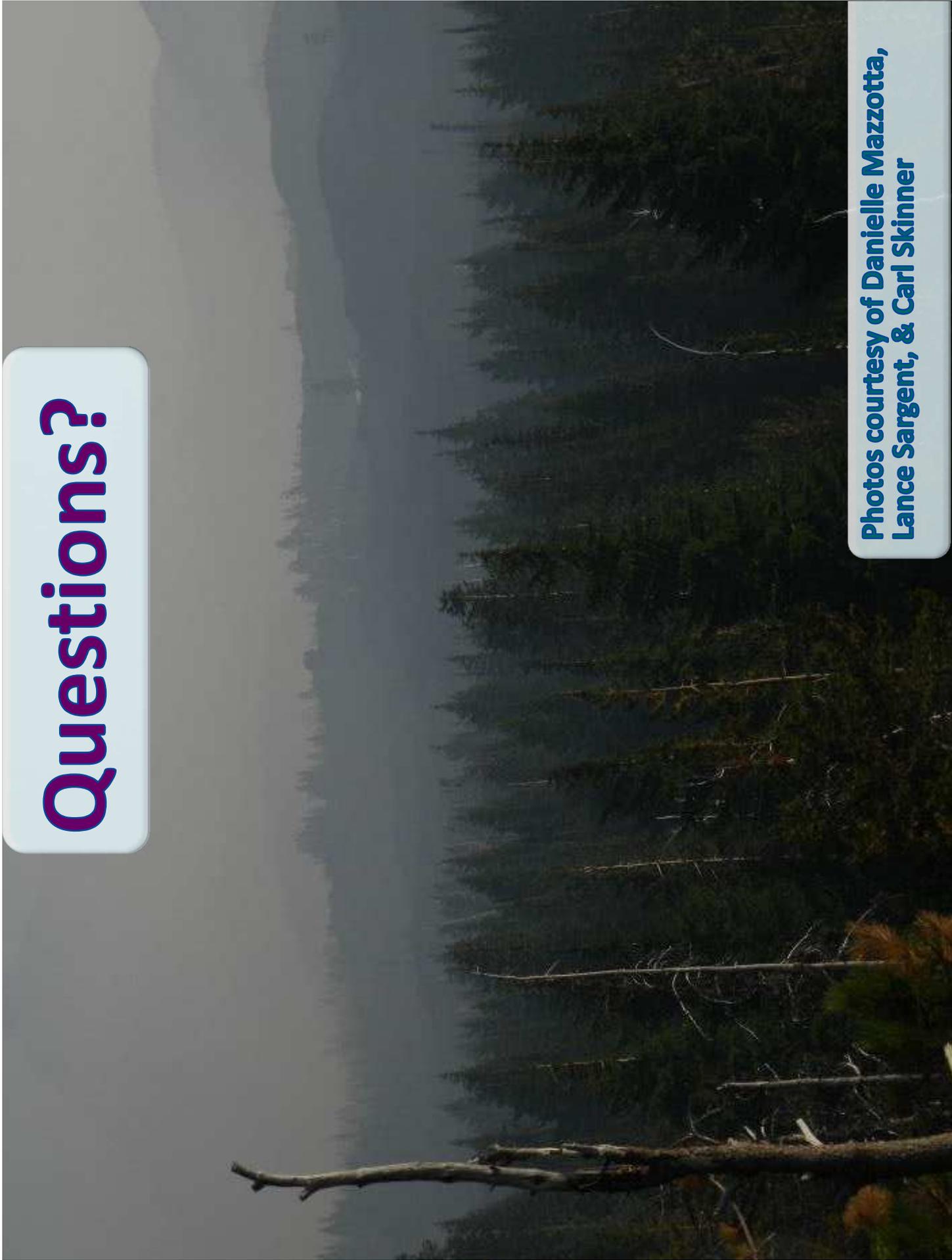
**How to focus the message?**



- **Further statistical analysis**
- **Longitudinal panel study**

# Questions?

Photos courtesy of Danielle Mazzotta,  
Lance Sargent, & Carl Skinner



# References

**Brunson, MW and J Evans. 2005. Badly Burned? Effects of an Escaped Prescribed Burn on Social Acceptability of Wildland Fuels Treatments. Journal of Forestry 103(3): 134-138.**

**Brunson, MW and B.A. Shindler. 2004. Geographic Variation in Social Acceptability of Wildland Fuels Management in the Western United States. Society & Natural Resources 17(8): 661-678.**

**Dillman, DA. 2007. Mail and Internet Surveys: The Tailored Design Method. Hoboken, NJ: Wiley.**

**Loomis, JB, LS Bair, and A Gonzalez-Caban. 2001. Prescribed Fire and Public Support: Knowledge Gained, Attitudes Changed in Florida. Journal of Forestry 99(11): 18-22.**

**Riebau, A. R. and D. G. Fox. 2010. Smoke Science Plan (SSP) Implementation. Joint Fire Science Program.**

**Shindler, B and E Toman. 2003. Fuel Reduction Strategies in Forest Communities: A Longitudinal Analysis of Public Support. Journal of Forestry 101(6): 8-15.**

**Shindler, B, E Toman, and S McCaffrey. 2009. Longitudinal Analysis of Public Responses to Wildland Fuel Management: Measures to Evaluate Change and Predict Citizen Behaviors in Agency Decision Processes. Final Project Report to the JFSP, Project Number 06-4-1-26. Accessed November 14.**

**Weisshaupt, BR, MS Carroll, KA Blatner, WD Robinson, and P Jakes. 2005. Acceptability of Smoke from Prescribed Forest Burning in the Northern Inland West: A Focus Group Approach. Journal of Forestry 103(4): 189-193.**

**Winter, GJ, C Vogt, and JS Fried. 2002. Fuel Treatments at the Wildland-Urban Interface: Common Concerns in Diverse Regions. Journal of Forestry 100(1): 15-21.**